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APHIS 81-2-3 April 1974

Production of The

UNITED STATES DEPARTMENT OF AGRICULTURE Animal and Plant Health Inspection Service

RELEASES AND RECOVERIES OF CEREAL LEAF BEETLE PARASITES 1973 1

A Summary of Releases and Recoveries of Imported Parasites
of <u>Oulema melanopus</u> (L.) Indicating Species, Release
and Recovery Sites, and Countries of Origin

Compiled by
Cereal Leaf Beetle Parasite Rearing Laboratory

The Cereal Leaf Beetle Parasite Rearing Laboratory was established by the Agricultural Research Service² in 1966 to develop and implement a biological control program against the cereal leaf beetle. Five parasite species have been introduced from Europe by the Entomology Research Division, Agricultural Research Service: An egg parasite, Anaphes flavipes; and four larval parasites; Tetrastichus julis, Diaparsis carinifer, Diaparsis spp., and Lemophagus curtus. One or more of these species has been colonized in nine States. Establishment of all five species liberated has been confirmed.

¹An addendum to APHIS 81-2 (issued May 1972), "Releases and Recoveries of Cereal Leaf Beetle Larval Parasites, 1967 - 1972," and an addendum to APHIS 81-2 (issued December 1972), "Releases and Recoveries of Cereal Leaf Beetle Parasites 1972."

²Effective October 31, 1971, Plant Protection Division, Agricultural Research Service, became a part of Plant Protection and Quarantine Programs, Animal and Plant Health Service (APHS). Effective April 2,1972, APHS became Animal and Plant Health Inspection Service.

Releases of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973.

| Parasite | Release locality | Origin | Total no. |
|------------------|----------------------------------|---|-----------|
| Anaphes flavipes | Indiana: | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | |
| Foerster) | Dearborn County | | |
| 1 delately | Harrison Twp. | Branch ¹ | 4.500 |
| | · | | 4,500 |
| | Kelso Twp. | Do, | 4,500 |
| | Decatur County | | |
| | Washington Twp. | Do. | 9,000 |
| | | | |
| | Fayette County | | |
| | Harrison Twp. | Do. | 2,250 |
| | | | _, |
| | Jasper County | | |
| | Walker Twp. | Do. | 2,250 |
| | Infference Country | | |
| | Jefferson County | | |
| | Lancaster Twp. | Do. | 2,250 |
| | Shelby Twp. | Do. | 2,250 |
| | Lake County | | |
| | Lake County | D | 2.22 |
| | Ross Twp. | Do. | 2,250 |
| | West Creek Twp. | Do. | 2,250 |
| | La Porte County | | |
| | Clinton Twp. | Do. | 2.260 |
| | | | 2,250 |
| | Dewey Twp. | Do. | 2,250 |
| | Hanna Twp. | Do. | 2,250 |
| | Noble County | | |
| | Swan Twp. | Do. | 4.500 |
| | | D0. | 4,500 |
| | Ohio County | | |
| | Randolph Twp. | Do. | 4,500 |
| | Union Twp. | Do. | 2,250 |
| | | 20. | 2,230 |
| | Porter County | | |
| | Jackson Twp. | Do. | 2,250 |
| | Morgan Twp. | Do. | 6,750 |
| | Porter Twp. | Do. | 2,250 |
| | 5.3 | 20. | 2,250 |
| | Rush County | | |
| | Richland Twp. | Do. | 4,500 |
| | 0.1.0 | | |
| | Starke County | | |
| | Railroad Twp. | Do. | 2,250 |
| | Switzerland County | | |
| | Switzerland County Craig Twp. | Do. | 2 250 |
| | | | 2,250 |
| | Jefferson Twp. | Do. | 2,250 |
| | Pleasant Twp. | Do. | 4,500 |
| | Wabash County | | |
| | Wabash County | D | 1.600 |
| | Chester Twp. | Do. | 4,500 |
| | Whitley County | | |
| | Richland Twp. | Do. | 4,500 |
| | Union Twp. | Do. | 4,500 |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no. |
|------------------|--------------------------------------|------------|-----------|
| Anaphes flavipes | Michigan: | | |
| Foerster) (Con.) | Missaukee County | | |
| , (, | Clam Union Twp. | Branch! | 18,000 |
| | | Di unon | 10.000 |
| | Pennsylvania: | | |
| | Butler County | | |
| | Clay Twp. | Do. | 4,500 |
| | | | |
| | Crawford County | | |
| | Greenwood Twp. | Do. | 2,250 |
| | Vernon Twp. | Do. | 4,500 |
| | · | | ,,500 |
| | Indiana County | | |
| | White Twp. | Do. | 2,250 |
| | | | 2,220 |
| | Jefferson County | | |
| | Warsaw Twp. | Do. | 2,250 |
| | • | | -,250 |
| | Lawrence County | | |
| | Slippery Rock Twp. | Do. | 4,500 |
| | , | | ,,500 |
| | Mercer County | | |
| | New Vernon Twp. | Do. | 4,500 |
| | Wilmington Twp. | Do. | 4,500 |
| | 5 | 201 | 4,500 |
| | Westmoreland County | | |
| | South Huntingdon Twp. | Do. | 2,250 |
| | | _ 0. | 2,250 |
| | • | | |
| | Virginia: | | |
| | Alleghany County | | |
| | Jackson River Mag. Dist. | Do. | 4,500 |
| | Augusta County | | |
| | Augusta County | | |
| | Beverly Manor Mag. Dist. | Do. | 4,500 |
| | North River Mag. Dist. | Do. | 2,250 |
| | Pastures Mag. Dist. | Do. | 4,500 |
| | River Head Mag. Dist. | Do. | 2,250 |
| | Path County | | |
| | Bath County Williamsville Mag. Dist. | D | 4.500 |
| | williamsville iviag. Dist. | Do. | 4,500 |
| | Bedford County | | |
| | Lakes Mag. Dist. | D. | (750 |
| | Lanes Mag. Dist. | Do. | 6,750 |
| | Botetourt County | | |
| | Amsterdam Mag. Dist. | Do. | 2.250 |
| | Buchanan Mag. Dist. | Do. Do. | 2,250 |
| | Duchanan Mag. Dist. | D0. | 4,500 |
| | Campbell County | | |
| | Central Mag. Dist. | D | 2.25 |
| | | Do. | 2,250 |
| | Patrick Henry Mag. Dist. | Do. | 4,500 |
| | Craig County | | |
| | , | D | 4 500 |
| | Simmonsville Mag. Dist. | Do. | 4,500 |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no. |
|------------------|--------------------------|------------|-----------|
| Anaphes flavipes | Virginia: (Con.) | | |
| Foerster) (Con.) | Franklin County | | |
| r outer, (com, | Gills Creek Mag. Dist, | Branch1 | 2,250 |
| | Union Hall Mag. Dist. | Do. | 4,500 |
| | | | |
| | Giles County | | |
| | Pembroke Mag. Dist. | Do. | 2,250 |
| | Highland County | | |
| | Stonewall Mag. Dist. | Do. | 9,000 |
| | | | |
| | Montgomery County | | |
| | Shawsville Mag. Dist. | Do. | 4,500 |
| | Pulaski County | | |
| | Dublin Mag. Dist. | Do. | 6,750 |
| | Newbern Mag. Dist. | Do. | 4,500 |
| | newoon mag. Dist. | D0. | 4,500 |
| | Roanoke County | | |
| | Big Lick Mag. Dist. | Do. | 4,500 |
| | Catawba Mag. Dist. | Do. | 2,250 |
| | Salem Mag. Dist. | Do. | 4,500 |
| | Rockbridge County | | |
| | South River Mag. Dist. | Do. | 2,250 |
| | Walkers Creek Mag. Dist. | Do. | 6,750 |
| | | | |
| | West Virginia: | | |
| | Barbour County | | |
| | Philippi Mag. Dist. | Do. | 4,500 |
| | | | |
| | Berkeley County | _ | |
| | Falling Water Mag. Dist. | Do. | 9,000 |
| | Hedgesville Mag. Dist. | Do. | 2,250 |
| | Fayette County | | |
| | New Haven Mag. Dist. | Do. | 2,250 |
| | | | · |
| | Grant County | | |
| | Grant Mag. Dist. | Do. | 4,500 |
| | Milroy Mag. Dist. | Do. | 2,250 |
| | Hampshire County | | |
| | Bloomery Mag. Dist. | Do. | 4,500 |
| | Capon Mag. Dist. | Do. Do. | 6,750 |
| | Romney Mag. Dist. | Do. Do. | 2,250 |
| | - V | | 2,253 |
| | Hardy County | | |
| | Moorefield Mag. Dist. | Do. | 4,500 |
| | South Fork Mag. Dist. | Do. | 9,000 |
| | Jackson County | | |
| | Ripley Mag. Dist. | Do. | 2,250 |
| | | | 9,000 |
| | Union Mag. Dist. | Do. | |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no |
|------------------|--------------------------|---------------------|----------|
| Anaphes flavipes | West Virginia: (Con.) | | |
| Foerster) (Con.) | Mercer County | | |
| (Coll.) | Plymouth Mag. Dist. | Branch ¹ | 4,500 |
| | Mineral County | | |
| | Welton Mag. Dist. | Do. | 4,500 |
| | Monroe County | | |
| | Red Sulphur Mag. Dist. | Do. | 2,250 |
| | Second Creek Mag. Dist. | Do. | 6,750 |
| | Springfield Mag. Dist. | Do. | 15,750 |
| | Sweetspring Mag. Dist. | Do. | 4,500 |
| | Wolf Creek Mag. Dist. | Do. Do. | 2,250 |
| | _ | | 2,200 |
| | Morgan County | D- | 2.250 |
| | Capapon Mag. Dist. | Do. | 2,250 |
| | Sleepy Creek Mag. Dist. | Do. | 2,250 |
| | Nicholas County | | |
| | Gauley Mag. Dist. | Do. | 2,250 |
| | Pocahontas County | | |
| | • | D- | 4.600 |
| | Edray Mag. Dist. | Do. | 4,500 |
| | Greenbank Mag. Dist. | Do. | 4,500 |
| | Preston County | | |
| | Grant Mag. Dist. | Do. | 4,500 |
| | Pleasant Mag. Dist. | Do. | 4,500 |
| | Portland Mag. Dist. | Do. | 6,750 |
| | Union Mag. Dist. | Do. | 9,000 |
| | Ralaigh County | | |
| | Raleigh County | _ | |
| | Richmond Mag. Dist. | Do. | 4,500 |
| | Shady Spring Mag. Dist. | Do. | 2,250 |
| | Randolph County | | |
| | Beverly Mag. Dist. | Do. | 4,500 |
| | Huttonsville Mag. Dist. | Do. | 6,750 |
| | Roaring Creek Mag. Dist. | Do. | 2,250 |
| | Valley Bend Mag. Dist. | Do. | 13,500 |
| | Roane County | | |
| | Reedy Mag. Dist. | Do. | 6,750 |
| | Summers County | | |
| | Green Sulphur Mag. Dist. | Do. | 4,500 |
| | Pipestem Mag. Dist. | Do. | 4,500 |
| | r specient mag. Dist. | Do. | 4,300 |
| | Taylor County | | |
| | Grafton Mag. Dist. | Do. | 9,000 |
| | Tyler County | | |
| | Ellsworth Mag. Dist. | Do. | 2,250 |
| | Dist. | 20. | |
| | Lincoln Mag. Dist. | Do. | 2,250 |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no |
|--------------------|-----------------------|------------------------|----------|
| Anaphes flavipes | West Virginia: (Con.) | | |
| (Foerster) (Con.) | Upshur County | | |
| | Banks Mag. Dist. | Branch ¹ | 2,250 |
| . 90 | Meade Mag. Dist. | Do. | 4,500 |
| • | | | |
| Tetrastichus julis | Indiana: | | |
| (Walker) | Allen County | | |
| | Eel River Twp. | Gull Lake ² | 2,736 |
| | Dearborn County | | |
| | Harrison Twp. | Do. | 4,800 |
| | Kelso Twp. | Do. | 4,800 |
| | | | |
| | DeKalb County | F | |
| | Keyser Twp. | Do. | 2,736 |
| | Elkhart County | | |
| | Benton Twp. | Do. | 2,736 |
| | Fayette County | | |
| | Harrison Twp. | Do. | 2,880 |
| | Posey Twp. | Do. | 4,992 |
| | Franklin County | | |
| | Brookville Twp. | Do. | 9,600 |
| | brookvine Twp. | Во. | 7,000 |
| | Fulton County | | |
| | New Castle Twp. | Do. | 2,736 |
| | Hancock County | | |
| | | D | 0.600 |
| | Sugar Creek Twp. | Do. | 9,600 |
| | Henry County | | |
| | Dudley Twp. | Do. | 2,520 |
| | Spiceland Twp. | Do. | 2.520 |
| | Kosciusko County | | |
| | Prarie Twp. | Do, | 1,800 |
| | Lake County | | |
| | Ross Twp. | Do. | 2,736 |
| | La Porte County | | |
| | Cass Twp. | Do. | 2,736 |
| | Dewey Twp. | Do. | 1,800 |
| | Hanna Twp. | Do. | 2,520 |
| | Marshall County | | |
| | | D - | 2.72/ |
| | Center Twp. | Do. | 2,736 |
| | Miami County | | |
| | Richland Twp. | Do. | 2,736 |

See footnotes at end of table.

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no |
|--------------------|-------------------|------------------------|----------|
| Tetrastichus julis | Indiana: (Con.) | | |
| Walker) (Con.) | Porter County | | |
| | Jackson Twp. | Gull Lake ² | 2,736 |
| - | Rush County | | |
| | Center Twp. | Do. | 1,800 |
| | St. Joseph County | | |
| | Liberty Twp. | Do. | 1,800 |
| | Starke County | | |
| | Railroad Twp. | Do. | 1,800 |
| | Union County | | |
| | Union Twp. | Do. | 4,800 |
| | Wabash County | | |
| | Chester Twp. | Do. | 008,1 |
| | Wayne County | | |
| | Center Twp. | Do. | 4,800 |
| | Webster Twp. | Do. | 4,800 |
| | Whitley County | | |
| | Richland Twp. | Do. | 1,800 |
| | Union Twp. | Do. | 2,736 |
| | New York: | | |
| | Ontario County | | |
| | Dresdin Twp. | Do. | 2,520 |
| | Steuben County | | |
| | Coshocton Twp. | Do. | 2,520 |
| | | Ъ0. | 2,520 |
| | Wyoming County | | |
| | Attica Twp. | Do. | 2,520 |
| | Programme 12 | | |
| | Pennsylvania: | | |
| | Butler County | D | 4.000 |
| | Clay Twp. | Do. | 4,800 |
| | Centre County | - | 4.0.45 |
| | Ferguson Twp. | Do. | 3.840 |
| | Clarion County | | |
| | Highland Twp. | Do. | 4,800 |
| | Limestone Twp. | Do. | 3,840 |
| | Crawford County | | |
| | Fairfield Twp. | Do. | 3,840 |
| | N. Shenago Twp. | | |
| | field insectary | Do. | 14,400 |
| | Vernon Twp. | Do. | 3,840 |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no. |
|---------------------|-----------------------|------------------------|------------|
| Tetrastichus julis | Pennsylvania: (Con.) | | |
| (Walker) (Con.) | Lawrence County | | |
| | Slippery Rock Twp. | Gull Lake ² | 3,840 |
| | West Virginia: | | |
| | Mason County | | |
| | Robinson Mag. Dist. | | |
| | field insectary | Do. | _ 10,788 |
| | Pleasant County | | |
| | Washington Mag. Dist. | | |
| | field insectary | Do. | 10,752 |
| Diaparsis carinifer | Indiana: | | |
| Thomson) or species | Allen County | | |
| inomoon, or species | Eel River Twp. | Noggle's ³ | 420 |
| | 201 201 VI 1 11 P1 | HOBBIC 3 | 420 |
| | Carroll County | | |
| | Tippecanoe Twp. | Do. | 340 |
| | Dearborn County | | |
| | Harrison Twp. | Yugoslavia | 50 |
| | DeKalb County | | |
| | Keyser Twp. | Noggle's | 420 |
| | Smithfield Twp. | Do. | 640 |
| | Elkhart County | | |
| | Benton Twp. | Do. | 300 |
| | Union Twp. | Do. | 300 |
| | Fayette County | | |
| | - Harrison Twp. | Yugoslavia | 473 |
| | Posey Twp. | Noggle's | 680 |
| | Franklin County | | |
| | Brookville Twp. | Do. | 420 |
| | Highland Twp. | Yugoslavia Do. | 400 400 |
| | Polk O v v | | |
| | Fulton County | Ne solate | 200 |
| | New Castle Twp. | Noggle's | 300 |
| | Hancock County | - | |
| | Sugar Creek Twp. | Do. | 420 |
| | Henry County | | |
| | Dudley Twp. | Do. | 340 |
| | Spiceland Twp. | Do. | 340 |
| | Kosciusko County | | |
| | Prairie Twp. | Do. | 340 |

See footnotes at end of table.

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no. |
|---------------------|--------------------|-----------------------|-----------|
| Diaparsis carinifer | Indiana: (Con.) | | |
| Thomson) or species | Lake County | | |
| (Con.) | Ross Twp. | Noggle's ³ | 420 |
| (Coll.) | 11000 1110 | | 420 |
| | La Porte County | | |
| | Cass Twp. | Do. | 420 |
| | Dewey Twp. | Do. | 340 |
| | Hanna Twp. | Do. | 340 |
| | Johnson Twp. | | |
| | field insectary | Do. | 1,360 |
| | M 1-11-G | | |
| | Marshall County | | |
| | Center Twp. | Do. | 300 |
| | Green Twp. | Do. | 300 |
| | Polk Twp. | Do. | 300 |
| | Miami County | | |
| | Richland Twp. | Do. | 300 |
| | Richard Twp. | Во. | 300 |
| | Noble County | | |
| | Swan Twp. | Do. | 420 |
| | York Twp. | Do. | 340 |
| | | | |
| | Ohio County | | |
| | Union Twp. | Yugoslavia | 90 |
| | Porter County | | |
| | Jackson Twn | Noggle's | 420 |
| | Morgan Twp. | Do. | 420 |
| | | | |
| | Rush County 🐪 🛠 | | |
| | Center Twp. | Do. | 340 |
| | St. Joseph County | | |
| | Liberty Twp. | De | 240 |
| | Liberty Twp. | Do. | 340 |
| | Starke County | | |
| | Railroad Twp. | Do. | 340 |
| | | | |
| | Steuben County | | |
| | Fremont Twp. | Do. | 340 |
| | Switzerland County | | |
| | Pleasant Twp. | Viscoloria | 200 |
| | ricasant rwp. | Yugoslavia | 200 |
| | Union County | | |
| | Union Twp. | Do. | 400 |
| | | Noggle's | 420 |
| | | | |
| | Wabash County | | |
| | Chester Twp. | Do. | 340 |
| | Wayna Canada | | |
| | Wayne County | | |
| | Center Twp. | Do. | 420 |
| | Webster Twp. | Do. | 420 |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no. |
|---------------------|------------------------------|-----------------------|-----------|
| Diaparsis carinifer | Indiana: (Con.) | | |
| Thomson) or species | White County | | |
| Con.) | Liberty Twp. | Noggle's ³ | 340 |
| Con.) | Union Twp. | Do. | 340 |
| | Whitley County | | |
| | Richland Twp. | Do. | 340 |
| | Union Twp. | Do. | 420 |
| | Kentucky:4 | | |
| | Grant County | | |
| | Flingsville Area | | |
| | field insectary | Do. | 2,100 |
| | | | |
| | New York: | | |
| | Livingston County | | |
| | Caledonia Twp. | Yugoslavia | 481 |
| | Monroe County | | |
| | Wheatland Twp. | Do. | 484 |
| | Ontario County | | |
| | Dresdin Twp. | Do. | 497 |
| | | Noggle's | 340 |
| | Steuben County | | 2.40 |
| | Coshocton Twp. | Do. | 340 |
| | Wyoming County | | |
| | Attica Twp. | Do. | 340 |
| | Perry Twp. | Yugoslavia | 380 |
| | Pike Twp. | Do. | 483 |
| | | | |
| | Ohio: | | |
| | Coshocton County | | |
| | Bedford Twp. field insectary | Noggle's | 2,380 |
| | Fairfield County | | |
| | Hocking Twp. | | |
| | field insectary | Do. | 2,380 |
| | note insectary | Yugoslavia | 1,904 |
| | Guernsey County | | |
| | Jefferson Twp. | | |
| | field insectary | Noggle's | 1,700 |
| | · | Yugoslavia | 599 |
| | Jackson County | | |
| | Madison Twp. | | |
| | field insectary | Noggle's | 1,700 |

See footnotes at end of table.

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no. |
|----------------------|-------------------------------------|-------------|-----------|
| Diaparsis carinifer | Ohio: (Con.) | | |
| (Thomson) or species | Preble County | | |
| (Con.) | Somers Twp. | | |
| (Coll.) | field insectary | Noggle's | 2,380 |
| | Pennsylvania: | | |
| | Butler County | | |
| | Clay Twp. | Do. | 420 |
| | Clay Twp. | D0. | 420 |
| | Centre County | | |
| | Ferguson Twp. | Do. | 420 |
| | | 2-01 | 0 |
| | Clarion County | | |
| | Highland Twp. | Do. | 420 |
| | Limestone Twp. | Do. | 420 |
| | | | |
| | Crawford County | _ | |
| | Fairfield Twp. | Do. | 340 |
| | N. Shenango Twp. | | |
| | field insectary | Do. | 4,200 |
| | Vernon Twp. | Do. | 420 |
| | Woodcock Twp. | Yugoslavia | 498 |
| | Erie County | | |
| | • | Do. | 220 |
| | Elk Creek Twp. | D0. | 320 |
| | Lawrence County | | |
| | Slippery Rock Twp. | Noggle's | 340 |
| | Virginia: | | |
| | Augusta County | | |
| | | | |
| | Rivershead Mag. Dist. | D. | 1.602 |
| | field insectary | Do. | 1,602 |
| | Highland County | | |
| | Stonewall Mag. Dist. | Yugoslavia | 5,412 |
| | • | | |
| | West virginia. | | |
| | Cabell County | 5 | 003 |
| | Union Mag. Dist. | Do. | 993 |
| | Jackson County | | |
| | Union Mag. Dist. | Do. | 983 |
| | omon mag. Dist. | Noggle's | 840 |
| | | 1108800 | 0.40 |
| | Washington Mag. Dist. | Yugoslavia | 476 |
| | Maran Causta | | |
| | Mason County Robinson Mag. Dist | | |
| | Robinson Mag. Dist. field insectary | Macal-2 | 2.400 |
| | neid insectary | Noggle's | 2,400 |
| | Monroe County | | |
| | Red Sulphur Mag. Dist. | | |
| | field insectary | Yugoslavia | 3,167 |
| | | i ugosiavia | 5,107 |
| | note insectary | ۲, | |
| | Ohio County | | |

Release of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Parasite Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Release locality | Origin | Total no |
|----------------------------|-------------------------|-------------|----------|
| Diaparsis carinifer (Con.) | West Virginia: (Con.) | | |
| | Pleasant County | | |
| | Union Mag. Dist. | Noggle's | 420 |
| | Washington Mag. Dist. | | |
| | field insectary | Do. | 2,760 |
| | Putnam County | | |
| | Buffalo Mag. Dist. | Yugoslavia | 486 |
| | Teays Valley Mag. Dist. | Do. | 977 |
| | Wetzel County | | |
| | Proctor Mag. Dist. | Noggle's | 420 |
| | Wood County | | |
| | Harris Mag. Dist. | Do. | 420 |
| | Parkersburg Mag. Dist. | Do. | 420 |
| | | | |
| emophagus curtus | Indiana: | | |
| Townes) | La Porte County | | |
| | Johnson Twp. | | |
| | field insectary | Do. | 720 |
| | Ohio: | | |
| | Fairfield County | | |
| | Hocking Twp. | | |
| | field insectary | Do. | 820 |
| | field insectary | <i>D</i> 0. | 020 |
| | Guernsey County | | |
| | Jefferson Twp. | | |
| | field insectary. | Do. | 1.130 |
| | * . | | |
| | Pennsylvania: | | |
| | Crawford County | | |
| | N. Shenango Twp. | _ | |
| | field insectary | Do. | 2,400 |
| | Virginia: | | |
| | Augusta County | | |
| | Rivershead Mag. Dist. | | |
| | field insectary | Yugoslavia | 45 |
| | neid insectary | i agosiavia | 45 |
| | West Virginia: | | |
| | Mason County | | |
| | Robinson Mag. Dist. | | |
| | field insectary | Noggle's | 640 |
| | Pleasant County | | |
| | Washington Mag. Dist. | | |
| | field insectary | Do. | 640 |
| | | | |

¹Field collected in Branch County, Mich.

⁴Political subdivisions below county not available for Kentucky.

²Parasitized cereal leaf beetle larvae collected at Michigan State University, Gull Lake field insectary, Kalamazoo County, Mich.

³Parasitized cereal leaf beetle larvae collected at the Noggle field insectary in Barrien County, Mich.

New recoveries of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973

| Parasite | Recovery locality | No. of sites |
|------------------|--|--------------|
| Inaphes flavipes | Indiana: | |
| Foerster) | Allen County | |
| , | Lake Twp. | 1 |
| | | |
| | DeKalb County | |
| | Butler Twp. | 1 |
| | Franklin County | |
| | Brookville Twp. | 1 |
| | 2.00mm | • |
| | Fulton County | |
| | New Castle Twp. | 1 |
| | | |
| | Henry County | |
| | Dudley Twp. | 1 |
| | LaGrange County | |
| | Clear Spring Twp. | 1 |
| | The state of the s | - |
| | St. Joseph County | |
| | Olive Twp. | 1 |
| | | |
| | Steuben County Steuben Twp. | |
| | · · | 1 |
| | Union County | |
| | Center Twp. | 1 |
| | | |
| | Wayne County | |
| | Boston Twp. | 1 |
| | Mishigan | |
| | Michigan: Grand Traverse County | |
| | Garfield Twp. | 1 |
| | | • |
| | Missaukee County | |
| | Richland Twp. | 1 |
| | o. ol i o | |
| | St. Clair County | 1 |
| | China Twp. Cottoellville Twp. | 1 |
| | Fort Gratiot Twp. | 1 |
| | | · |
| | Wayne County | |
| | Brownstown Twp. | 3 |
| | New York: | |
| | Ontario County | |
| | Richmond Twp. | 1 |
| | | 1 |
| | Monroe County | |
| | Mendon Twp. | 1 |

New recoveries of parasites of the cereal leaf beetle, *Oulema melanopus* (L.) in the United States by the Cereal Leaf Beetle Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Recovery locality | No. of sites |
|------------------|------------------------------|--------------|
| Anaphes flavipes | Ohio: | |
| Foerster) (Con.) | Auglaize County | |
| | Douchouquet Twp. | 1 |
| | Clark County | |
| | Moorefield Twp. | 1 |
| | Darke County | |
| | Butler Twp. | 1 |
| | Delaware County | |
| | Kingston Twp. | 1 |
| | Hardin County | |
| | Pleasant Twp. | 1 |
| | Montgomery County | |
| | Miami Twp. | 1 |
| | Ross County | |
| | Concord Twp. | 1 |
| | Washington County | |
| | Marietta Twp. | 1 |
| | | |
| | Pennsylvania: | |
| | Armstrong County | |
| | W. Franklin Twp. | 1 |
| | Beaver County | |
| | Darlington Twp. | 1 |
| | Lawrence County | |
| | Neshannock Twp. | 1 |
| | Lycoming County | |
| | Loyalsock Twp. | 1 |
| | Mercer County | |
| | Wolf Creek Twp. | 1 |
| | West Vissinia | |
| | West Virginia: Mason County | |
| | Robinson Mag. Dist. | 1 |
| | Pleasant County | |
| | Washington Mag. Dist. | 1 |
| | Wood County | |
| | Harris Mag. Dist. | 2 |

New recoveries of parasites of the cereal leaf beetle, Oulema melanopus (L.) in the United States by the Cereal Leaf Beetle Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Recovery locality | No. of sites |
|---------------------|----------------------------------|--------------|
| Tetrastichus julis | Indiana: | |
| (Walker) | La Porte County | |
| (want) | Johnson Twp. | |
| | field insectary | 1 |
| | | |
| | Michigan: | |
| | Grand Traverse County | |
| | Garfield Twp. | 1 |
| | Kalamazoo County | |
| | Ross Twp. | |
| | field insectary | 1 |
| | Ohio: | |
| | Fairfield County | |
| | Berne Twp. | |
| | field insectary | 1 |
| | Hocking Twp. | 1 |
| | field insectary | 1 |
| | Jackson County | |
| | Madison Twp. | 1 |
| | | 1 |
| | Muskingum County | |
| | Licking Twp. | |
| | field insectary | 1 |
| | Danasalvania | |
| | Pennsylvania: | |
| | Crawford County N. Shenango Twp. | |
| | field insectary | 1 |
| | . How insectary | I |
| | West Virginia: | |
| | Mason County | |
| | Robinson Mag. Dist. | |
| | field insectary | 1 |
| | Pleasant County | |
| | Washington Mag. Dist. | |
| | field insectary | 1 |
| | Wood County | |
| | Harris Mag. Dist. | 1 |
| Diaparsis carinifer | Michigan: | |
| Thomas) | Kalamazoo County | |
| i iionias) | Ross Twp. | |
| | field insectary | 1 |
| | nete insectally | 1 |

New recoveries of parasites of the cereal leaf beetle, Oulema melanopus (L.) in the United States by the Cereal Leaf Beetle Rearing Laboratory, Methods Development Branch, APHIS, USDA, Niles, Mich. in 1973—Continued

| Parasite | Recovery locality | No. of sites |
|---------------------|-------------------|--------------|
| Diaparsis carinifer | Pennsylvania: | |
| (Thomas) (Con.) | Crawford County | |
| | N. Shenango Twp. | |
| | field insectary | 1 |
| Lemophagus curtus | Michigan: | |
| (Townes) | Berrien County | |
| | Bertrand Twp. | 1 |